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PENSOFT

EVOLUTIONARY SYSTEMATICS

A second addition to the herpetological type catalogue of the Zoological Museum of Hamburg (ZMH)

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Abstract

In this second addition to the herpetological type catalogue of the Zoological Museum of Hamburg (ZMH), Leibniz Institute for the Analysis of Biodiversity Change, 53 additional newly discovered or newly described type specimens are presented, to expand upon the previously published type catalogues of 1998 and 2006. The species are listed in alphabetical order by family and original binomen or trinomen. References to original descriptions, currently accepted names, and remarks detailing additional information about type status are included. Lectotypes are designated for *Leptodactylus kreffti*, *Epicrates monensis* and *Hemidactylus brookii haitianus*. Currently, the collection contains 397 type specimens of 176 nominal species. Corrections of spelling mistakes and changes of status for some types listed in the previous two type catalogues are given here, in addition to some lost and missing type specimens, which were not recorded in the previous type catalogues.

Key Words

Amphibia, lectotype designation, lost type specimens, Reptilia, type specimens

Introduction

The first herpetological type catalogue of the Zoological Museum of Hamburg (ZMH) (Hallermann 1998) included 113 nominal type species and 236 type specimens. A first addition to the type catalogue, published in 2006, increased the catalogue to 137 nominal species and subspecies with 318 type specimens: 54 holotypes, 69 syntypes, 147 paratypes, 3 lectotypes and 43 paralectotypes. Over the last 20 years, overlooked type specimens have been discovered in the collection and some new species were described, resulting in 52 additional type specimens: 4 holotypes, 26 paratypes, 15 syntypes, 1 neotype, 4 lectotypes, and 3 paralectotypes of 33 nominal species. Currently, the collection holds a total of 396 type specimens for 175 nominal species (64 holotypes, 6 lectotypes, 1 neotype, 99 syntypes, 177 paratypes, 49 paralectotypes, 2 nomina nuda).

The entire ZMH herpetological collection currently contains approximately 62.000 individual specimens in about 42.000 cataloged lots. All herpetological material (amphibians, turtles, crocodiles and Lepidosauria) are cataloged in a FileMaker Pro Advanced 18 database file.

In the following addition to the type catalogue, each species or subspecies is listed in its originally proposed combination. If the name has been subjected to subsequent nomenclatorial change or has been placed into synonymy, the name in current use is given below the original name, together with a citation to the authority for the change. The arrangement in the following list is alphabetical by genus and species within each family. Corrections of spelling mistakes and changes of status of some types listed in the first two type catalogs are added. In the second part of the catalog, all missing type specimens are listed, which were omitted in the first and second type catalogues. The family and genus concept given here follows the Reptile Database (Uetz et al. 2025) for reptiles and the Amphibian Species of the World Database (Frost 2025).

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List of type specimens

Museum acronyms

AMNH	American Museum of Natural History, New York, USA
NHMUK (BMNH)	The Natural History Museum, London [former British Museum (Natural History)], UK
MNHN	Muséum national d'histoire naturelle, Paris, France
MSNG	Museo Civico di Storia Naturale "G. Doria" di Genova, Italy
MZB	Museum Zoologicum Bogoriense, Indonesia
NMB	Naturhistorisches Museum Basel, Switzerland
NMSL	Colombo National Museum of Sri Lanka
NMW	Naturhistorisches Museum Wien, Austria
SMF	Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt
SMNS	Staatliches Museum für Naturkunde Stuttgart, Germany
TMHC	Tomáš Mazuch Herpetological Collection
ZFMK	Museum Koenig (former Zoologisches Forschungsinstitut und Museum Alexander Koenig Bonn) of Leibniz Institute for Biodiversity Change (LIB), Germany
ZISP	Zoological Institute St. Petersburg, Russia
ZMB	Museum für Naturkunde Berlin (former Zoologisches Museum Berlin), Germany
ZMH	Zoologisches Museum Hamburg (of Leibniz Institute for Biodiversity Change LIB), Germany

1. Amphibia

Anura

Bufonidae

***Ansonia teneritas* Waser, Schweizer, Haas, Das, Jankowski, Min & Hertwig, 2016**

Paratypes. ZMH A11479 + A11568 (collecting no. AH11-090, AH11-089), two adults; Frog pond I: Large blackwater pond/lake right next to abandoned logging road and deeply entrenched mountain stream on the other side of the road, Gunung Hose, Malaysia, Sarawak, Borneo; leg. Alexander Haas, Ch'ien Lee, Yeo Siew Teck 25 Aug. 2011.

Craugastoridae

***Hylodes fasslianus* Werner, 1916**

Syntype. ZMH A15999 (old nos. 43, 1859), adult female; Environs of Bogota, 2700 m, "Ost- Cordillieren", Colombia; leg. A. Fassl 1910; vend. F. Erner 8.07.1916.

Current name. *Pristimantis bogotensis* (Peters, 1863).

Hylidae

***Hyla felixarabica* Gvoždík, Kolík & Moravec, 2010**

Paratype. ZMH A04131 (old no. 2884), adult; Sanaa (Sana), Yemen; leg. Dr. G. Rathjes / Dr. H. v.Wissmann June 1931; ded. 7. Jan. 1932.

Comment. specimen was previously in the collection under the name *Hyla arborea* var. *savignyi*, with the field number 141/3.

***Hyla gularis* Werner, 1916**

Syntype. ZMH A16000 (old no. 1858), adult female; Environs of Bogota, 2700 m, Colombia; leg. A. Fassl 1910; vend. F. Erner 8. Jul. 1916.

Current name. *Dendropsophus molitor* (Schmidt, 1857).

Comment. Two original labels attached to the specimen: "Cotype" and "Nr 45".

Hyperoliidae

***Rappia platycephala* Pfeffer, 1893**

Syntypes. ZMH A15623-24 (old no. 583), subadult & adult male; Quelimane (= Quelimane), at the coast, Zambezia Province, Mozambique; leg. Dr. F. Stuhlmann 8. Jan – 12. Jan 1889.

Current name. *Hyperolius argus* (Peters, 1854).

Comment. Illustrations of the type specimens in Tornier (1896).

***Rappia dombeensis* Tornier, 1896**

Paratype. ZMH A16591 (old no. 807), adult male; Port Natal (= Durban), KwaZulu-Natal, South Africa; leg. W. Joost 23. April 1893.

Current determination. *Hyperolius marmoratus marmoratus* (Rapp, 1841), in the *Hyperolius marmoratus-viridiflavus* complex.

Comment. Holotype: ZMB 6465, according to Tillack et al. (2021). Type locality: "Dombe" = Dombe Grande, Benguela Province, Angola. Beside the specimen from "Dombe" which he regarded as "Type", Tornier also mentioned "identical" specimens from "Chinchoxo", ZMB 9173 (originally three specimens) and a specimen from "Port Natal" in the "Hamburger Museum", which is a paratype. The type series seems to include at least two species. The examination of the holotype revealed that it is a member of the 'sharp-nosed reed frogs', *Hyperolius nasutus* complex (see Frost (2024); without genetic data, identification to species is not possible (Tillack et al. 2021).

W. Joost, the collector, also collected invertebrates at "Lourenço Marques" [Maputo, Mozambique] and "Delagoa-Bai" [Maputo Bay, Mozambique] (Wassmann 1922; Harms and Dupéré 2018).

Leptodactylidae

***Leptodactylus kreffti* Werner, 1904**

Lectotype. (designated herein): ZMH A15770 (old no. 1439), subadult female; Coronel (in a meadow pond), Región del Bío-Bío, Chile; leg. Paul Krefft, ded. 20. June 1898 (Fig. 1).

Current name. *Eupsophus roseus* (Duméril & Bibron, 1841).

Comment. Werner (1904: 18) described the species using a male from ZMH (holotype, lost), collected during the Hamburger Magellanische Sammelreise (1892–93) but there was at least one female in the Krefft collection, which is also part of the type series, which was donated to the Hamburg Museum in 1898. Werner also examined this

Figure 1. Lectotype of *Leptodactylus kreffti* ZMH A15770 in dorsal, lateral and ventral view (from above to below).

specimen but did not mention it in the description. Werner 1904 did not specify a holotype and, thus, did not provide an objective, stable name-bearing type for the species in the original publication (CODE § 74.5). This justifies the designation of the surviving syntype as a lectotype.

Megophryidae

***Leptobrachium parvum* Boulenger, 1893**

Paralectotypes? ZMH A04076-77 (collecting no. 38 lot 1), adult; Mti. Carin (=Karen), 900–1000 m asl., 19°15'N, 97°30'E, Burma (Myanmar), Kayah State; leg. L. Fea 1885–1889.

Current name. *Boulenophrys parva* (Boulenger, 1893).

Comment. there are10 specimens claimed to be syntypes for this species, of which only five were mentioned in the original publication (Boulenger, 1893); some confusion exists regarding which specimens represent the syntype series of *L. parvum* from Karin Bia-po (now encompassing northwestern Thandaunggyi township, Hpa-An district). Boulenger clearly marked in the BMNH accessions register that the four BMNH specimens are type specimens (BMNH 1947.2.25.9-12). MSNG claims to have three type specimens (MSNG 29412A [designated lectotype] and MSNG 29412B [2'paratipi']) (Capocaccia, 1957) and ZMB lists one 'paralectotype' (ZMB 11587) (Bauer et al. 1996; Mahony et al. 2020). Together with the two ZMH specimens (A04076-77) marked as types there seems to be too many specimens apparently belong to the original type series. Mahony et al. (2020) proposed that the specimen from ZMB, and the two from MSNG, are additional material without type status (Mahony et al. 2020) and consequently, this would also apply to the ZMH material.

A mix-up of the specific epithets *parvus* and *parvulus*, both described by Boulenger in the same year, resulted in *Ixalus parvulum* Boulenger, 1893 being wrongly listed by Hallermann (2006) in the first addition to the type catalogue (this type specimen is not present in ZMH collection).

Myobatrachidae

***Crinia michaelseni* Werner, 1914**

Paratype. ZMH A15021 (collecting no. 2071), adult; Albany Station 166 (Freshwater ponds and marsh on granite hills, coastland), Western Australia, Australia; leg. W. Michaelsen 13. Aug. 1905; ded. W. Michaelsen 23. Feb. 1913.

Current name. *Geocrinia leai* (Fletscher, 1898), according to Harrison, 1927.

Comment. the holotype was collected at "Donnybrook" Western Australia on 28. or 29. July 1905 and was apparently deposited in the collection of the Zoological Museum (ZMH) and lost. AMNH 23451 was identified as the probable holotype by Cogger et al. (1983) but no evidence was reported that the former Naturhistorisches Museum Hamburg gave the holotype to AMNH. Additional paratypical material is deposited in ZMB (Bauer et al. 1996) and NMW (Häupl et al. 1994).

Ranidae

***Sumaterana dabulescens* Arifin, Smart, Hertwig, Smith, Iskandar & Haas, 2018**

Paratypes. ZMH A14154-58, A12668, six adult males; stream 2 Pidie Jaya, Aceh, Sumatra, Indonesia; leg. U. Arifin & G. Cahyadi 20. March 2014. ZMH A14159, adult female; A14161-62, A12667, three adult males; stream 1 (Sungai Air Jambu) Aceh Tengah, Indonesia; leg. Arifin & Cahyadi 6. March 2014.

Comments. received from MZB as MZB.Amph.29384, MZB.Amph.29390, MZB.Amph.29382, MZB.Amph.29386, MZB.Amph.29380, MZB.Amph.29388, MZB.Amph.29397, MZB.Amph.29399, MZB.Amph.29401, MZB.Amph.29403. Holotype: MZB.AMPH.29396.

***Sumaterana montana* Arifin, Smart, Hertwig, Smith, Iskandar & Haas, 2018**

Paratype. ZMH A14194, adult female; small creek in front of Camp 4.5 Gunung Baru, Taman Nasional, 2000 m, Lebong, Kerinci-Seblat, Bengkulu, Sumatra, Indonesia; leg. U. Arifin & G. Cahyadi 3. May 2014.

Comment. received from MZB as MZB.Amph.29376, Holotype: MZB.AMPH.29377.

2. Reptilia

Squamata

Agamidae

***Bronchocela rubrigularis* Hallermann, 2009**

Holotype. ZMH R09271 (field no. Tri 25, adult male); Trinkat Island, central Nicobar Islands, India; leg. S. P. Vijayakumar Jan–Dec. 2004.

Paratype. ZMH R09272 (field no. Kat 43, adult male); Katchall Island, central Nicobar Islands, India; leg. S. P. Vijayakumar Jan–Dec. 2004.

***Sitana bahiri* Amarasinghe, Ineich & Karunarathnu, 2015**

Paratype. ZMH R06344 (old nos. 2656, 3124, adult male); SE Sri Lanka, Sri Lanka; leg. Dr. Paul Benedict Sarasin, received from NMB 13 Dec. 1904.

Current name. *Sitana ponticeriana* Cuvier, 1829.

Comment. Deepak et al. (2016b) provided detailed morphological comparisons of members of the *Sitana ponticeriana* complex, in which they showed extensive overlap between *S. ponticeriana* and *S. bahiri*. Deepak and Karanth (2018) used multiple molecular species delimita-

tion methods to show that *S. bahiri* is indeed *S. ponticeriana*. Based on these lines of evidence, Deepak et al. 2018 consider *S. bahiri* as a junior synonym of *S. ponticeriana*.

Boidae

Epicrates cupreus var. *concolor* Jan, 1863

Holotype. ZMH R20170 (old no. 50), adult; Costa Rica, no precise locality.

Current name. *Epicrates maurus* Gray, 1849.

Comment. The specimen was deposited in the ZMH collection under the name *Epicrates cenchris*.

Epicrates monensis Zenneck, 1898

Lectotype. (designated herein): ZMH R20204 (old no 1581), adult female; Isla de Mona, Mayaguez, Puerto Rico; leg. C. Bock 1891 (Fig. 2).

Current name. *Chilabothrus monensis* (Zenneck, 1898).

Comment. Body nearly in two parts and dorsum with deep wound. Second adult specimen formerly in ZMH missing and destroyed. The type specimen of *Epicrates monensis* had not been fixed in the original description. A designation of a lectotype and restriction of the type locality of *E. monensis* should prevent future uncertainty about the identity of the initial species. Originally, this type series contained four specimens, two adults and two juveniles. The justification for lectotype designation follows (§ 74.5 of the CODE) to provide an objective, stable name-bearing type for a species when one was not designated in the original publication.

Paralectotypes. ZMH R08195-96, two juveniles with same data as lectotype but collected in 1894.

Homalochilus striatus Fischer, 1856

Syntype. ZMH R20190 (old nos. 54, B 18. a. 3.), adult; Santo Domingo (imprecise locality), Dominican Republic; received from a merchant.

Current name. *Chilabothrus striatus*.

Comment. Specimen „beta“ of Fischer 1856: 106. The type series of *H. striatus* seems to be composed of two species. Second syntype ZMH R20206 (old nos 53, alpha), adult; St. (Saint) Thomas, Virgin Islands (USA); received from Capitain Sleebohm in 1852 may be assignable to *Chilabothrus grantii* Stull, 1933, who overlooked or neglected the presence of the type specimens of Fischer. (Reynolds pers. com.).

Colubridae

Comastes quincunciatus Jan, 1863 (nomen nudum)

Comastes quincunciatus Jan in Jan & Sordelli, 1871.

Paralectotype. ZMH R12030 (old nos. 527, 220 C40.a.d.), adult; Mazatlan, Mexico; leg. Wefoel 1861.

Figure 2. Lectotype of *Epicrates monensis* ZMH R20204 in dorsal view and head in dorsal, lateral and ventral view (from upper left to lower right.

Current name. *Hypsiglena torquata* ref. Boulenger 1894: 210.

Comment. The Hamburg specimen is listed as a type specimen in Jan (1863) but without a sufficient description. Later in the Icononographie (Jan and Sordelli 1871, livr. 38), the Hamburg specimen is not figured but one specimen from Museum Heidelberg, now in ZFMK, from Caracas is. This specimen will subsequently be designated as a lectotype (Böhme pers. com.). The 1863 paper demonstrates that the Hamburg specimen was among those examined by Jan and considered to be part of the type series.

Dendrelaphis kopsteini Vogel & van Roijen, 2007

Paratype. ZMH R08445 (field no. PSGV 269), adult male; on the highway to Cameron Highlands, Perak province, West Malaysia, 620 m a.s.l.; leg. G. Vogel 22. Sept. 1994, ded. Sept. 2006.

Dromicus protenus Jan in Jan & Sordelli, 1867

Holotype. ZMH R09317 (old no. 213), adult; Port-au-Prince, Haiti; no collector known.

Current name. *Hypsirhynchus parvifrons protenus* (Jan, 1867) according to Cochran 1941.

Comment. described in Jan & Sordelli, Iconographie Generale des ophidiens livr. 25, Pl. 3, fig. 2.

Elaphis melanurus var. *malinensis* Jan in Jan & Sordelli, 1867

Holotype. ZMH R14443 (old no. 539); Manila, Luzon, Philippines; received 1861.

Current name. *Coelognathus erythrurus manillensis* (Jan, in Jan & Sordelli, 1867).

Comment. Jan described var. *manillensis* in 1863 (nomen nudum) although the figure (plate) was later published in 1867 (livr. 21 pl. IV fig. 2.). *Coelognathus erythrurus manillensis* is a new name for *Compsosoma melanurum* var. C of Duméril et al. 1854: 301. Jan gives credit for the name to the latter authors but they did not propose one. Schulz (1996: 119) incorrectly cites Jan, 1863a as the author of this name (Savage & McDiarmid, 2017: 53). In the 1863a publication Jan does not mention specimens from MNHN but only Amburgo (= Hamburg) and Neuchatel (Switzerland). Thus, the specimen(s) examined by Duméril, Bibron and Duméril are not type(s). But note that this 1863 publication does not describe the subspecies and is not valid, but rather the name appears as a nomen nudum. The scalation characters indicated in the 1863a text apply to the species *Compsosoma melanurum* as a whole and not to the new subspecies *manillensis*. Thus 1867 should be the valid date for description since the 1867 plate allows recognition of the subspecies compared to others and can be considered as representing the holotype. What remains unclear is if the other specimen referred by Jan in 1863 from Java in Neuchatel still exists. This could not be the same subspecies as the holotype from Hamburg because it did not occur on Java.

Helicops wagleri Jan, 1863a

Holotype. ZMH R09316 (old no. 544), adult; Pinar del Rio Province, Cuba; received from natural history dealer J.C.A. Brandt.

Current name. *Tretanorhinus variabilis wagleri* (Jan, 1863: 75).

Comment. Type locality: Brasil (in error) reproduced in Jan and Sordelli 1868, Iconographie Generale des ophidiens, livr. 28, PI. 1, fig. 1.

Leptophis frenatus Fischer, 1883

Syntypes. ZMH R09314-15 (old no. 5071), two adults; Haiti, 1085 m a.s.l.; received from S. Stahl.

Current name. *Hypsirhynchus parvifrons protenus* ((Jan, 1867) according to Cochran 1941).

Comment. Original locality Sierra Leone on label in error, specimen c & d of Fischer with 136 mm total-length, four Syntypes a, b in ZMB c, d in ZMH.

Lejonotus schlegelii Jan, 1863

Syntype. ZMH R21296 (old no. 486) adult; no locality, no collector.

Current name. *Grayia smythii* (Leach, 1818), *Grayia smithii* Laurent 1956, nomen emendatum.

Comment. This specimen is from beginning of the ZMH Museum collection (based upon low no. and label) and seems most probably correspond to the specimen Jan 1863: 74 described and mentioned from Hamburg: (Amburgo). Patria (home) is metioned by Jan and corresponds to the old label. Another syntype was mentioned that was deposited in Leiden from Ashanti (Ghana), but it has not yet been found.

Ligonirostra stuhlmanni Pfeffer, 1893

Lectotype. ZMH R07910 (old no. 1646), adult; Usambáa, Usambara, Tanzania; leg. F. Stuhlmann Sept. 1888.

Current name. *Prosymna stuhlmanni* (Pfeffer, 1893).

Comment. designated as lectotype by Kirchhof, Mahlow and Tillack 2016, one of the two syntypes No. 521 or 522 of Pfeffer with 132 (133–136) ventrals, 31(31–32) subcaudals, 190 mm (ca. 20 cm).

Gekkonidae

Cnemaspis indraneildasii Bauer, 2002

Holotype. ZMH R06125(old no 875), adult female; Gund, Uttara Kannada, Karnataka Province, India; leg. G. A. v. Maydell 20. Jan. 1956 (Deutsche Indien Expedition 1955–58).

Current name. *Cnemaspis goaensis* Sharma, 1976; according to: Khandekar et al. 2019, 2021.

***Hemidactylus brookii haitianus* Meerwarth, 1901**

Lectotype. (designated herein): ZMH R22378 (old no 1500), adult; Haiti (no specific locality); leg. G. Tippenhauer 9. July 1893, ded. Tippenhauer 1894 (Fig. 3).

Current name. *Hemidactylus angulatus angulatus* Hallowell, 1854.

Comment. The other two syntypes (2250 (a-b) are from ZMH and were destroyed. *Hemidactylus brookii haitianus* was elevated to species status by Powell (1993) and Calderon et al. 1994. Weiss and Hedges 2007 synonymized all West Indian geckos referred to *H. brookii* or *H. haitianus* with *H. angulatus* based on little or no DNA sequence differences. The Caribbean populations have been most likely been introduced from Africa by the slave trade. However, given that *H. angulatus* may be a species complex, resurrection of *H. haitianus* is possible (Uetz et al. 2024).

Lamprophiidae

***Boaedon broadleyi* Hallermann & Hawlischek, 2025**

Holotype. ZMH R08485, adult female; near Addis Ababa (Abada) (approx. N 9°1'48"N, 38°4'24"E, 2552 m), Oromia Region, Ethiopia; leg. Dr. Peter Angenstein during the end of the 1980s.

Paratypes. ZMH R08486, male; ZMH R11333 female; R11341-42, male, female all same data as holotype, but donated to ZMH in 2019.

Comment. One paratype in MNHN, and 8 paratypes in ZFMK, all from Ethiopia.

***Boaedon subniger* Hallermann & Hawlischek, 2025**

Holotype. ZMH R22350 (TMHC 2023.01.1018), juvenile female; 8.5.km S Yuffleh (10°18'00"N, 47°10'58"E, 1758 m), Gumbi Hills, Somaliland, Somalia; leg. Tomáš Mazuch 31. Aug. – 5. Sept. 2017, ded. Sept. 2024.

Comment. Seems to be endemic to northern Somalia (Somaliland).

Scincidae

***Lygosoma* (*Emoa*) *impar* Werner, 1898**

Syntype. ZMH R17431 (old no. 4082), adult; „Ralum, N. Pommern“ [Former plantation near todays city, Kokopo’], East New Britain Province, Papua New Guinea; leg. Friedrich Dahl (no date), vend. F. Werner 15. Jan. 1915.

Current name. *Emoia impar* (Werner, 1898).

Comment. Other syntypes: ZISP 9144, ZMB 14661, 14662; Neotype: NMW 9965:1 invalidly designated by Ineich and Zug (1991), see Bauer et al. (2003).

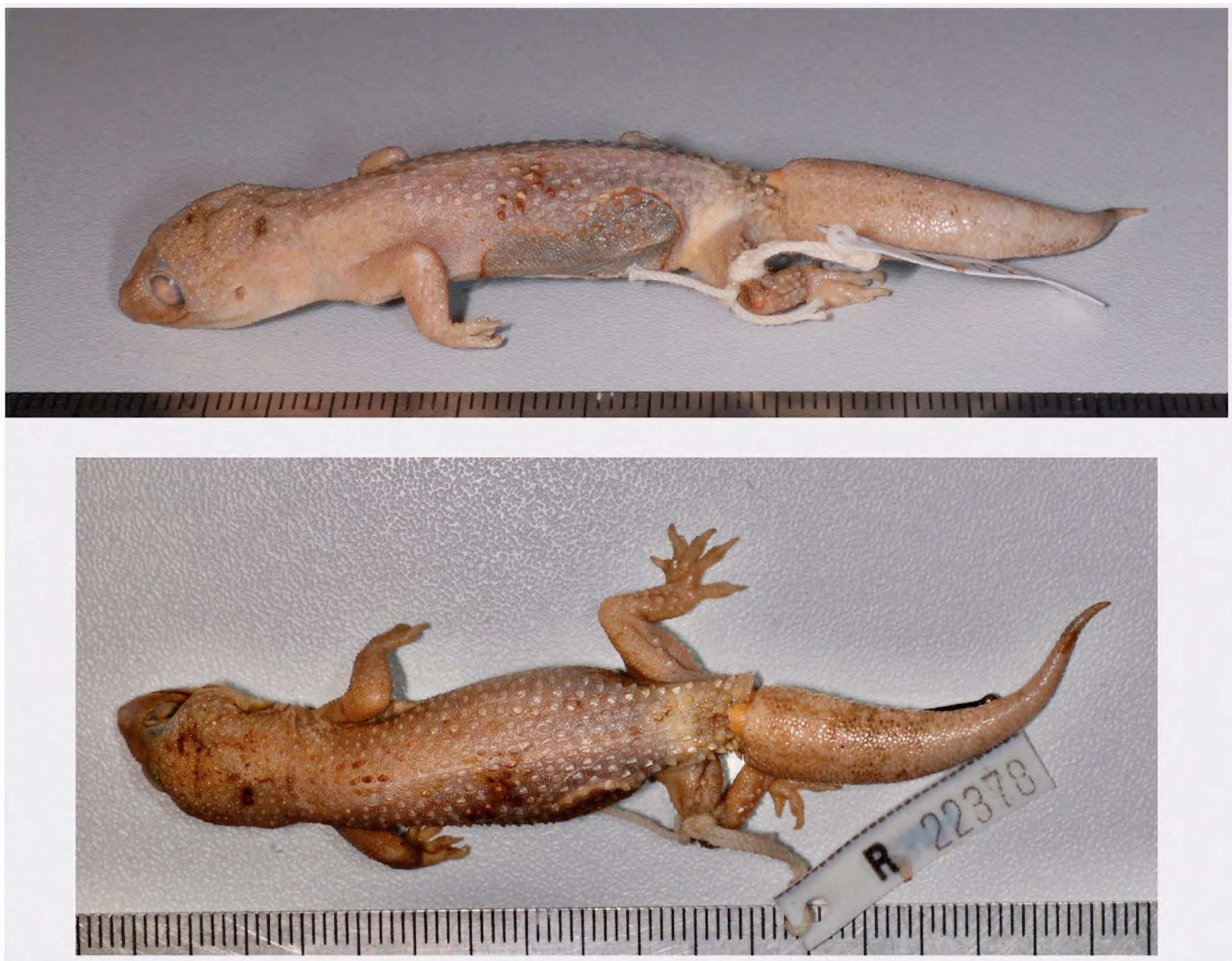

Figure 3. Lectotype of *Hemidactylus brookii haitianus* ZMH R22378 in dorsal and lateral view (above and below).

***Mabuia sulcata* var. *nigra* Werner, 1910**

Holotype. ZMH R01994 (old no 4258), adult; Lüderitzbucht, Namibia; leg. W. Michaelsen 20. – 24. July 1911, ded. 1916.

Current name. *Trachylepis sulcata* (Peters, 1867), according to Portik et al. 2010.

***Mabuia sulcata* var. *subnigra* Werner, 1910**

Syntype. ZMH R01990 (old no. 4257I), adult; Neudamm. 42 km ENE Windhuk, Khomas, Namibia; leg. W. Michaelsen 10. – 15. May 1911, ded. 1916.

Current name. *Trachylepis sulcata sulcata* (Peters, 1867).

Teiidae

***Cnemidophorus divisus* Fischer, 1879**

Syntypes. ZMH R09545-59 (old no. 884), five adults; near Baranquilla, "Neugrenada", Atlántico, Colombia; leg. Großkopf (probably T. Grosskopf) 1879.

Current name. *Ameiva bifrontata divisa* (Fischer, 1879).

Typhlopidae

***Typhlops monensis* Schmidt, 1926**

Holotype. ZMH R19667 (RK 1582), adult; Isla de Mona, Mayaguez, Puerto Rico; leg. C. Bock 1891.

Paratype. ZMH R19637 (2039) same data as holotype, but leg. 1894.

Current name. *Antillotyphlops monensis* (Schmidt, 1926).

Missing Type specimens

In this section are all type specimens listed which were definitively deposited in the ZMH collection and lost. Listed thus are specimens that were not formerly listed in the first and second type catalogs (Hallermann 1998, 2005). A large number of this missing type specimens were described by Prof. Franz Werner, a herpetologist from the University of Vienna, who worked at various times in and with the ZMH collection between 1908 and 1924. Although Werner sold some of his collected material to various museums, the items listed here are exclusively from the former Natural History Museum in Hamburg, to which Werner was closely attached. This is confirmed by his own words (Werner 1917): "Die nachstehenden Arten . . . . sind von mir im Laufe der letzten Jahre erworben und als neu erkannt und daher nach meinem Grundsatze, Typen neuer Arten nicht in meinem Privatbesitze zu belassen, dem H a m b u r g e r Museum ins Eigentum übergeben worden, demjenigen Museum, mit dem ich seit mehr als einem Vierteljahrhundert in freundschaftlichster Beziehung stehe und das meine Arbeiten stets in entgegenkommendster Weise gefördert hat. "(Translation: The following species. . . . have been acquired by me over the past few years and recognized as new. Therefore, in accordance with my principles of not keeping types of new species in my private possession, they have been transferred to the Hamburg Museum, the museum with which I have maintained a most friendly relationship for more than a quarter of a century and which has always supported my work in the most accommodating manner).

After a thorough review of Jan's publication (1863), in which all specimens he identified as type specimens were listed along with their museum location and place of discovery, but only rarely with a diagnosis, which were later illustrated in the multi-volume illustrated atlas of snakes (Jan & Sordelli), several more specimens, clearly deposited in the Hamburg Museum, were described by Jan, recognized as definitively lost, and are listed here.

Agamidae

***Draco ochropterus* Werner, 1910**

Syntypes. (3 males); Key Inseln (Kai-islands); leg. H. Rolle.

Current name. *Draco lineatus* Daudin, 1802.

***Draco intermedius* Werner, 1910**

Holotype. (male); Bandar Kwala, Sumatra, Indonesia; leg. O. Puttfarken.

Current name. *Draco maximus* Boulenger, 1893.

Amphisbaenidae

***Amphisbaena boliviana* Werner, 1910**

Syntypes. (1 adult and 1 juvenile); Amazonas river source, Province Beni, Bolivia; leg. Herrmann Roeschmann.

Current name. *Amphisbaena camura* Cope, 1862.

***Leposternon pfefferi* Werner, 1910**

Holotype. Paraguay (no specific locality).

Current name. *Leposternon microcephalum* Wagler, 1824.

Colubridae

***Dendrophis effrenis* Werner, 1909**

Holotype. Colombo, Sri Lanka; leg. John Hagenbeck 1904.

Current name. *Dendrelaphis effrenis* (Werner, 1909).

Comment. Synonymized by Smith 1943 with *D. caudolineatus* but resurrected by Danushka et al. 2020 as two separate species and recognized as senior synonym of *D. sinharajensis*. These authors designated as neotype: NMSL 2016.06.01 NH, adult female, which was the holotype of *D. sinharajensis*.

***Elaphis melanurus* var. *bivrigata* Jan & Sordelli, 1867: 3 Liv, 21 plate 5, fig. 1**

Holotype. Canton, China.

Current name. *Coelognathus flavolineatus* (Schlegel, 1837) ref. Schulz (1996).

Comment. Identification from Plate 5 in Jan and Sordelli (1867) is surely *C. flavolineatus*, although the species currently is not known from Canton (= Guangzhou Chi, Guangdong Province. In 1863 Jan specifically stated that the figured specimen is from Hamburg but no sufficient description: *Elaphis melanurus* var. *bivrigata* Jan, 1863: 61 (nomen nudum).

***Homalocranium hoffmanni* Werner, 1909**

Holotype. (female), Guatemala (no specific locality).

Current name. *Tantilla melanocephala* (Linnaeus, 1758).

***Leptognathus boliviana* Werner, 1909**

Holotype. (female); Rio Beni, Bolivia; leg. C. Bock.

Current name. *Dipsas peruvana* Boettger, 1898, ref. Harvey and Embert 2008.

Comment. This species was also described by Werner in a dichotomous key, in Werner 1910.

***Leptognathus praeornata* Werner, 1909**

Holotype. (female); Venezuela; leg. Kapt. R. Rauschenplat.

Current name. *Dipsas praeornata* (Werner, 1909).

Comment. Regarded as a valid species by Harvey and Embert (2008). This species was described by Werner in a dichotomous key, 1910 in Zool. Jahrb. Syst 28: 282, with a remark by Werner "In the collection of the Hamburg Museum, will be described in more detail later. The description in Zool. Jahrb. Syst. was published in 1910 after the more detailed description, which was issued in 1909 (Werner 1909, 1910).

***Leptognathus temporalis* Werner, 1909**

Holotype. Esmeraldas, Ecuador; leg. Kapt. E. Krause, Damp-ship Nako Kosmos-line.

Current name. *Dipsas temporalis* (Werner, 1909).

Comment. This species was also described by Werner in a dichotomous key, in Werner 1910 Zool. Jahrb. Syst 28: 283 (see above).

***Leptophis vertebralis* Werner, 1909**

Holotype. (juvenile); Petropolis, Brasil; leg. Dr. Ohaus.

Current name. *Cercophis auratus* (Schlegel, 1837) ref. Hoodmoed et al. 2019.

Comment. Hoge 1959 included *Leptophis vertebralis* in the synonymy of *Uromacerina ricardinii*. Hoodmoed et al. 2019 synonymized *Uromacer ricardinii* with *Cercophis auratus*.

***Liophis bolivianus* Werner, 1909**

Holotype. Charobamba, Bolivia.

Current name. *Philodryas bolivianus* Boulenger, 1885, according to Thomas 1976.

***Liophis wagleri* Jan, 1863**

Syntype. Bahia, Brazil.

Current name. *Erythrolamprus almadensis* (Wagler, 1824).

Comment. There were three syntypes mentioned by Jan (1863: 87) with measurements and description, the whereabouts of this type material is unknown but it may have been destroyed, also in the other two institutions: Monaco (Munich) and Milano Jan (1857), Scali (1996).

***Oligodon pulcherrimus* Werner, 1909**

Holotype. Pudang (in Bobongan) = Ujungpadang, Atceh, Sumatra, Indonesia; leg. H. Hagedorn.

Comment. A neotype (ZMB 70756) was designated by Tillack and Günther 2010.

***Philodryas boulengeri* Werner, 1909**

Holotype. No locality (allegedly India, in error) as given in the original description.

Current name. *Philodryas mattogrossensis* Koslowsky, 1898.

***Rhadinaea frenata* Werner, 1909**

Holotype. (male); Paraguay; received Rolle.

Current name. *Erythrolamprus frenatus* (Werner, 1909), ref. Grazziotin et al. 2012.

***Stenorhina degenhardt* var *ocellata* Jan in Jan & Sordelli, 1867: 48 livraison, pl. II fig. 5**

Holotype. Puerto Cabello, Carabobo State, Venezuela.

Current name. *Stenorrhina degenhardtii ocellata*.

***Streptophorus oxynotus* Werner, 1909**

2 Syntypes. (1 males, 1 females); Carriblanco, Rosta Rica; leg. B. Preston.

Current name. *Ninia maculata* (Peters, 1875).

***Streptophorus subtesselatus* Werner, 1909**

Holotype. Carriblanco, Rosta Rica; leg. B. Preston.

Current name. *Ninia psephota* (Cope, 1851).

Comment. It is impossible to determine its current identity with certainty.

Elapidae

***Dendroechis reticulata* Fischer, 1855**

Holotype. Sao Tome Island (St Thomé & Principe).

Current name. *Dendroaspis jamesonii* (according to L. Ceriaco pers.com. 2024).

Comment. Described in the Nachtrag (= addendum) of Fischer's sea snake paper of 1855, In 1856 Fischer illustrates this specimen under the name *Dendroaspis jamesonii* on plate I. (Ceriaco et al. 2025).

Gekkonidae

***Phyllodactylus abrupteseriatus* Werner, 1913**

Syntypes. (two adults); allegedly Brazil; leg. August Brückmann.

Current name. *Phyllodactylus reissii* Peters, 1862.

***Phyllodactylus mentalis* Werner, 1910**

Holotype. (male); allegedly Central-America (Mexico?); rec. estate of L.v. Pöppinghausen.

Current name. *Phyllodactylus xanti*, Cope, 1863.

Gymnophthalmidae

***Perodactylus kraepelini* Werner, 1910**

Holotype. (female); Puerto Max, N Paraguay; leg. Lous de Arts jr.

Current name. *Colobosaura kraepelini* (Werner, 1910).

Comment. A neotype (SMF 101370) was designated by Cacciali and Köhler 2017.

***Prionodactylus champsonotus* Werner, 1910**

Holotype. River drainage of Itapocú, Sta Catarina, Brazil; leg. W. Ehrhardt 8. May 1907.

Current name. *Placosoma cordylinum champsonotus* (Werner, 1910).

***Proctoporus bolivianus* Werner, 1910**

Holotype. Sorata, Bolivia; leg. C. Bock Sept. 1900.

Comment. A neotype in the Museu Seleção Brasileira (CBF 3437) was designated (Goicoechea et al. 2013).

Iguanidae

***Ctenosaura* (*Cachryx*) *annectens* Werner, 1910**

Holotype. No locality; no collector.

Current name. *Cachryx defensor* Cope, 1866.

Lamprophiidae

***Lamprophis longicauda* Werner, 1909**

2 Syntypes. No locality.

Current name. *Lamprophis fuscus* Boulenger, 1893.

Comment. It is impossible to determine its identity with certainty because it is lost.

Liolaemidae

***Saccodeira arenarius* Werner, 1910**

Syntypes. (one female, three juveniles); Punta Arenas, Chile; leg. H. Mutschke 1908.

Current name. *Liolaemus magellanicus* (Hombron & Jacquinot, 1853).

Polychrotidae

***Polychrus femoralis* Werner, 1910**

Holotype. (male); Guayaquil, Ecuador; leg. F. v. Buchwald 1903.

Scincidae

***Lygosoma* (*Leiolopisma*) *miangense* Werner, 1910**

Holotype. Pulau Miang (Est- coast of Borneo), Province Kalimantan, Indonesia; leg. Th. Lorenz 1901.

Current name. *Lipinia miangense* (Werner, 1910).

Comment. Only known from the type locality (Meiri et al. 2017).

Teiidae

***Cnemidophorus roeschmanni* Werner, 1910**

Holotype. Province Beni Bolivia; leg. H. Roeschmann.

Current name. *Ameiva ameiva* (Linnaeus, 1758).

Tropiduridae

***Scartiscus liocephaloides* Werner, 1910**

Holotype. Paraguay (no specific locality); leg. H. Rolle.

Current name. *Stenocercus caducus* (Cope, 1862).

***Stenocercus atrigularis* Werner, 1913**

Holotype. (male); S source area of Amazonas River, Prov. Beni, Bolivia; leg. H. Roeschmann.

Current name. *Stenocercus roseiventris* D'Orbigny in Duméril & Bibron, 1837).

***Steneocercus difficilis* Werner, 1910**

Holotype. (male); Cochabamba, Bolivia; leg. M. Hirschmann.

Current name. *Stenocercus marmoratus* (Duméril & Bibron, 1837).

Typhlopidae

***Typhlops steinhausi* Werner, 1909**

2 Syntypes. Cameroon (no specific locality).

Current name. *Afrotyphlops steinhausi* (Werner, 1909).

Comment. Destroyed in WW II. A neotype MNHN-RA 1964.0139 was designated by Roux-Estève (1974) according to Hahn (1980: 72).

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Appendix 1

Specimens originally designated as types, but not fulfilling the requirements of type status: Nomina nuda:

Lycodon aulicus var. *reticulatum* Jan, 1863: 96 (nomen nudum).

ZMH R20573, (old no. 148), adult; Java, Indonesia; received from Captain H. Meyer in 1855

Current name: *Lycodon aulicus* Boie, 1827.

Typhlops liberiensis var. *intermedia* Jan, 1863 (nomen nudum).

Typhlops liberiensis var. *intermedia* Jan, 1864

ZMH R04484 (old no. 2), adult female; Liberia (without precise locality).

Current name: *Afrotyphlops liberiensis* (Hallowell, 1864).

Jan designated in 1863 many different specimens as types, which were later figured in the Iconographie. Unfortunately, he died before the first livraison of Iconographie vol 2 was issued. In his 1863 publication he mentions where the specimens were deposited.

The Hamburg specimen was designated by Jan as the single type (holotype) but without a sufficient diagnosis (nomen nudum). In 1864 Jan figured a specimen from Milan Museum as *Typhlops liberiensis* var. *intermedia* and other *Typhlops* species on the same plate (1864 livr. 5, pl 5, fig. 2. This illustration fulfils the requirements of that time for a type description and the Milan specimen becomes a type, which is lost (Scali 1996). The designation of a neotype seems not to be necessary because of its status as a junior synonym of *T. liberiensis*. The name *Typhlops liberiensis intermdia* is still available and if it is necessary to stabilize this name by designation of a neotype, ZMH R04484 would serve as the perfect specimen.